

## CASE REPORT

# DENGUE HEMORRHAGIC FEVER PRESENTING WITH ACUTE PANCREATITIS

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**Abstract.** Acute pancreatitis is an uncommon manifestation of dengue fever. Here we present a 47 year old male with dengue hemorrhagic fever who presented with acute pancreatitis and associated hyperglycemia. To our knowledge, this is the first reported case of dengue complicated with acute pancreatitis from South Asia.

**Key words:** dengue hemorrhagic fever, acute pancreatitis, hyperglycemia

### INTRODUCTION

Dengue is an arboviral infection common in tropical countries, including South and Southeast Asia. Its incidence is on the rise (Prasittisuk, 2008). It has become one of the most important communicable diseases in Sri Lanka. The incidences of the severe forms of this disease, namely dengue hemorrhagic fever and dengue shock syndrome, are also increasing, leading to an increase in mortality (Epidemiological Unit, Sri Lanka, 2009). Sri Lanka experienced the largest outbreak of dengue fever in 2009 with the highest recorded mortality (Epidemiological Unit, Sri Lanka, 2004-2009). Dengue fever is an acute febrile viral disease which usually presents with high fever, headache, body aches, skin rash and hemorrhagic manifestations (WHO SEARO, 1999). Unusual manifestations have been reported, with a concomitant

increase in morbidity and mortality (Miranda *et al*, 2003; Méndez and González, 2006) Acute pancreatitis is one such rare manifestation. We report a patient with dengue hemorrhagic fever who presented with acute pancreatitis and associated hyperglycemia.

### CASE REPORT

Our patient is a 47 year old male from Divulapitiya, a city in Gampaha District, which is in a western province of Sri Lanka. He presented to Colombo North Teaching Hospital, Ragama, Sri Lanka in August 2009 with fever of one week duration and worsening abdominal pain of three days duration. He also complained of faintness and abdominal distension. There were no bleeding manifestations on admission.

The patient had undergone right inguinal herniorrhaphy ten days prior to presentation. He gave a history of intermittent asthma. There was no history of diabetes mellitus. He had not been on any long term drug therapy and he had not taken any non-steroidal antiinflammatory drugs in the recent past. He had never smoked. He con-

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sumed alcohol occasionally but there was no history of recent binge drinking. The clinical examination on admission revealed an ill patient who was in pain. He was febrile with a temperature of 37.8°C and mildly dehydrated. There was no pallor or jaundice. There were no skin rashes and flushing was absent. He was hypotensive with a blood pressure of 90/60 mmHg, the pulse rate was 105/minute and the pulse volume was low. His abdomen was distended and there was diffuse tenderness with guarding. The liver was palpable 3 cm below the right costal margin. Bowel sounds were sluggish. The respiratory system and central nervous system examinations were normal.

An ultrasound of the abdomen showed an enlarged, edematous, hypoechoic pancreas with peri-pancreatic fluid collection, compatible with acute pancreatitis. There was no ascites and a chest radiograph showed no pleural effusion. Laboratory tests on admission revealed an elevated serum amylase (1,381 IU/l), an elevated random blood sugar (358 mg/dl), thrombocytopenia (32,000/mm<sup>3</sup>), a hematocrit of 45% and a normal white blood cell count (6,200/mm<sup>3</sup>) with neutrophilia (88%). The liver transaminases were moderately elevated (AST- 192 U/l; ALT - 122 U/l) and C reactive protein was markedly elevated (96 mg/l). The serum bilirubin was 0.4 mg/dl, serum creatinine was 1.0mg/dl, serum sodium was 136 mEq/l and serum potassium was 3.9 mEq/l. Dengue fever serology using Hexagon Dengue, - an immunochromatographic rapid test for the Detection of dengue IgG and IgM antibodies (sensitivity 91%; specificity, 90%), was positive for both IgM and IgG on day 8 of fever. The antibody test was qualitative, thus titers were not available. Blood cultures and urine culture were negative. On the second day of hospitalization, the patient developed

melenas. There were no other bleeding manifestations. A diagnosis of dengue hemorrhagic fever grade III, complicated with acute pancreatitis, was made.

The patient was initially managed with intravenous fluids and transfusions with fresh frozen plasma. Hyperglycemia was managed with insulin. Blood sugar levels remained normal without insulin by the ninth day of hospitalization. Regarding the management of acute pancreatitis, surgical opinion was sought, and it was decided to manage the case conservatively with intravenous antibiotics, intravenous fluids and by keeping the patient nil by mouth. Melena was managed with platelet transfusions and intravenous proton pump inhibitors; the melena resolved within one week. The fever had a prolonged course and resolved by the 14<sup>th</sup> day of hospitalization. Serum amylase levels came down slowly and reached normal levels 21 days after admission. After spending three weeks in the hospital, the patient made an uneventful recovery and went home to his family. On subsequent follow-up he was found to be normal.

## DISCUSSION

Dengue infections may be asymptomatic, cause undifferentiated fever (viral syndromes), lead to dengue fever or dengue hemorrhagic fever (WHO SEARO, 1999). The classical presenting features of uncomplicated dengue fever are high fever, headache, arthralgia, myalgia, flushing and skin rash. Dengue hemorrhagic fever is characterized by hemorrhagic manifestations and the potential to develop fatal shock (dengue shock syndrome). Abnormal hemostasis and plasma leakage are the main pathophysiological changes, with thrombocytopenia and hemoconcentration presenting as constant findings (WHO SEARO, 1999).

Acute pancreatitis is a rare complication of dengue fever. It has been reported previously only on a few occasions. (Jusuf *et al*, 1998; Chen *et al*, 2004; Derycke *et al*, 2005; Méndez and González, 2006). Involvement of the pancreas may be due to direct viral invasion or hypotension in dengue hemorrhagic fever. There are no reports of pancreatic histological findings in dengue infection to document direct viral invasion. This may be due to a difficulty in obtaining samples. More definitive studies are required to determine the pathogenesis and which subset of dengue patients develops pancreatitis. (Gulati and Maheshwari, 2007).

This is the first reported case of dengue pancreatitis from Sri Lanka and from South Asia. In this patient the features of acute pancreatitis were predominating at the time he presented to the hospital. The initial presentation was an "acute surgical abdomen" with associated hypotension and hyperglycemia which are features of acute pancreatitis. The presence of a low platelet count together with a history of fever indicate the possibility of dengue fever and dengue serology confirmed it. Hepatomegaly with a moderate elevation of transaminases is also in favor of dengue hemorrhagic fever. However, the CRP of 96 mg/l is not usually seen with dengue fever, which is a viral infection. Elevations in CRP have been associated with severe episodes of acute pancreatitis.

The case is presented not only because of the rare presentation of a common disease but also to emphasize that in dengue endemic areas, the possibility of dengue related pancreatitis should be entertained in patients presenting with abdominal pain and fever. This will enable the patient to receive adequate monitoring and supportive care directed at the management of dengue along with the management of acute pancreatitis.

## REFERENCES

- Chen TC, Perng DS, Tsai JJ, Lu PL, Chen TP. Dengue hemorrhagic fever complicated with acute pancreatitis and seizure. *J Formos Med Assoc* 2004; 103: 865-8.
- Derycke T, Levy P, Genelle B, Ruzsniowski P, Merzeau C. Acute pancreatitis secondary to dengue. *Gastroenterol Clin Biol* 2005; 29: 85-6.
- Epidemiological Unit, Ministry of Health, Sri Lanka. Guidelines on clinical management of dengue fever/dengue hemorrhagic fever. Colombo: Ministry of Health, 2009. [Cited 2009 Oct 21]. Available from: URL: <http://www.epid.gov.lk/publications.htm>
- Epidemiological Unit, Ministry of Health, Sri Lanka. *Quarterly Epidemiol Bull* 2004-2009. [Cited 2009 Oct 21]. Available from: URL: <http://www.epid.gov.lk/publications.htm>
- Gulati S, Maheshwari A. Atypical manifestations of dengue. *Trop Med Int Health* 2007; 12: 1087-95.
- Jusuf H, Sudjana P, Djumhana A, Abdurachman SA. DHF with complication of acute pancreatitis related hyperglycemia: a case report. *Southeast Asian J Trop Med Public Health* 1998; 29: 367-9.
- Méndez A, González G. Abnormal clinical manifestations of dengue hemorrhagic fever in children. *Biomedica* 2006; 26: 61-70.
- Miranda LE, Miranda SJ, Rolland M. Case report: spontaneous rupture of the spleen due to dengue fever. *Braz J Infect Dis* 2003; 7: 423-5.
- Prasittisuk C. Dengue situation in the South-East Asia Region. In: Asia Pacific Dengue Program Managers Meeting, Final Report. 2008: 8-13. [Cited 2009 Oct 21]. Available from: URL: [http://www.wpro.who.int/internet/files/mvp/Dengue\\_Report.pdf](http://www.wpro.who.int/internet/files/mvp/Dengue_Report.pdf)
- World Health Organization Regional Office for South-East Asia (WHOSEARO). Prevention and control of dengue and dengue hemorrhagic fever-comprehensive guidelines. New Delhi: WHO SEARO, 1999. [Cited 2009 Nov 25]. Available from: URL: [http://www.searo.who.int/LinkFiles/Dengue\\_chap-3.pdf](http://www.searo.who.int/LinkFiles/Dengue_chap-3.pdf)